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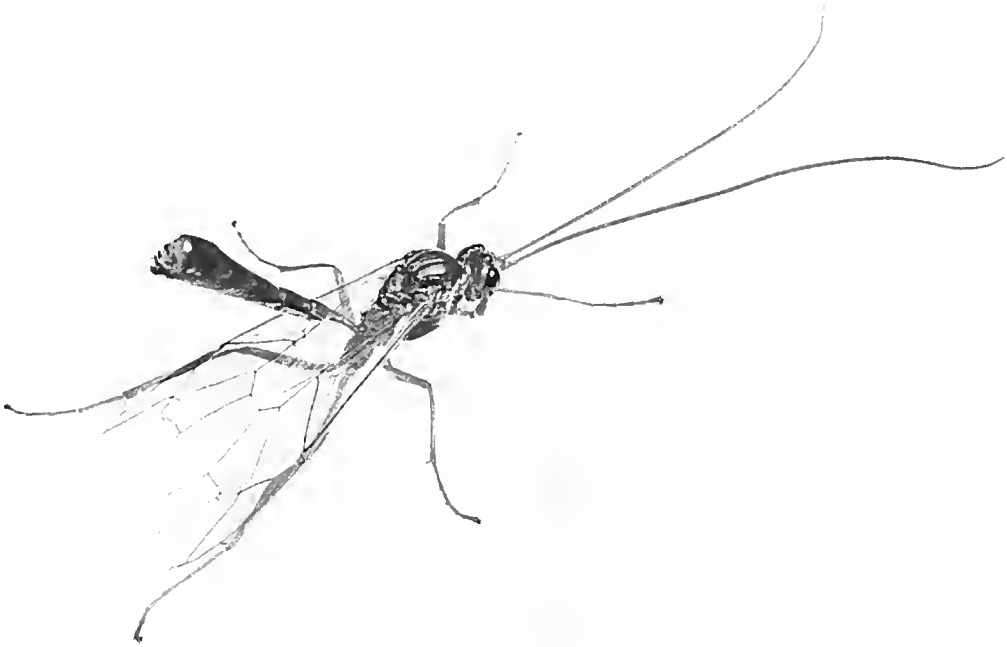

News Bulletin of The Entomological Society of Victoria Inc.

THE ENTOMOLOGICAL SOCIETY OF VICTORIA (Inc)

MEMBERSHIP

Any person with an interest in entomology shall be eligible for Ordinary membership. Members of the Society include professional, amateur and student entomologists, all of whom receive the Society's News Bulletin, the Victorian Entomologist.

OBJECTIVES

The aims of the Society are:

(a) to stimulate the scientific study and discussion of all aspects of entomology,
(b) to gather, disseminate and record knowledge of all identifiable Australian insect species,
(c) to compile a comprehensive list of all Victorian insect species,
(d) to bring together in a congenial but scientific atmosphere all persons interested in entomology.

MEETINGS

The Society's meetings are held at the 'Discovery Centre', Lower Ground Floor, Museum Victoria, Carlton Gardens. Melway reference Map 43 K5 at 8 p.m. on the third Tuesday of even months, with the exception of the December meeting which is held on the second Tuesday. Lectures by guest speakers or members are a feature of many meetings at which there is ample opportunity for informal discussion between members with similar interests. Forums are also conducted by members on their own particular interest so that others may participate in discussions.

SUBSCRIPTIONS (2010)

Ordinary Member	$30 (overseas members $32)
Country Member	$26 (Over 100 km from GPO Melbourne)
Student Member	$18
Electronic (only)	$20
Associate Member	$ 7 (No News Bulletin)
Institution	$35 (overseas Institutions $40)

Associate Members, resident at the same address as, and being immediate relatives of an ordinary Member, do not automatically receive the Society's publications but in all other respects rank as ordinary Members.

LIFE MEMBERS: P. Carwardine, Dr. R. Field, D. Holmes, Dr. T. New, Dr. K. Walker.

Cover design by Alan Hyman.

Cover photo: ***Megaceria sp.VE 41 (2) p39***
Photographer John Tiddy, a member of the Victorian Nature Photography Group with an interest in insects, has provided this photo using a white background photography technique. In this case the wasp has it's abdomen elevated due to the cold weather when it was found. An article expanding on this method of photography is included in the February 2011 bulletin.

Minutes of the Council Meeting 15 November 2011

The meeting was opened at 17:05

Present: P. Carwardine, P. Lillywhite, P. Marriott, L. Rogan
Apologies: D. Dobrosak, S. Curle I. Endersby, M. Fiedel
Minutes of the Council Meeting [Vic. Ent. 41(5): 87-88] (P Lillywhite, P Marriott)

Correspondence: As per previous minutes, correspondence the subject of which had expired by the time that the *Victorian Entomologist* was received by Members, is not published in the bulletin.

- Acknowledgement of STS Bursary from Chethani Atapattu & Ruby Keeble (Fintona Girls School)
- Acknowledgement of STS Bursary from Harry Morrall (Girton Grammar School)
- Society for Insect Studies, Circular No. 153

Treasurers Report: General a/c $5850 Le Souef a/c $5704 Publishing a/c $14313
There are currently 6 unfinancial members. The council requests Ian to contact these members before they are dropped from membership.

Editor' s Report: Photo for next year's bulletin will be chosen from available members photos. We will attempt to represent different families in each year. Linda will propose three alternatives and circulate to the council for decision in December and to be used from the February 2012 issue. December issue is nearing completion. Some articles will be held over for the February issue.

Membership Applications received and approved:

We welcome **Martin J. Landolt** to the society. His interests include pests (Coleoptera,Lepidoptera) , hymenoptera et al. "I am an observer, not a collector".

General Business
Colour Printing Linda is to contact Impactdigital to confirm previous quote and to arrange for future printing of the bulletin subject to receiving a satisfactory confirmation.
Publications MOV4-7 All are underway and are at varying stages. MoV1 is down to less than 20 copies and options are being sort to manage the situation when the volume runs out.
Previous issues Future agenda to include decision of time limit to apply before making past bulletins available on line.
Life Membership to be discussed on next council agenda.
Surveys Peter Marriott will review our role in the Bio Blitz surveys with Mark Norman in the new year.
Council and President's position Peter Marriott is actively seeking a replacement in his role as president. This need not be a current council member as adequate transition time will apply.
We also seek interested members to join the council for 2012. This is not an onerous task and is a great way to interact with others with keen entomological interests. Please contact any member of the council, as listed on the back of the bulletin.

Future meeting ideas

Raising caterpillars	Mites and bees
Excursion to new building at LaTrobe	Forensic entomology
Future light trapping, BBQ could be yearly	Two members sharing nights for the year

Explore the possibility of meeting at 7.45 and have a light supper at the end of the evening. We do need to be out of the building by 10.00 pm.

Future meeting schedule see page: 115

Meeting ended 18.48

Minutes of the General Meeting 18 October 2011

Present: Mike Halsey , Linda Rogan, Peter Marriott, Steve Curle, Russell Best, Peter Carwardine, Maik Fiedel, Joshua Grubb, Ken Harris, Marilyn Hewish, Ross Field, Geoffrey Weeks,

Apologies: Eileen Collins, Don Sands, Tony Morton, Kaye Proudley, David Stewart, Ian Endersby, Margaret Endersby, Laura Levens, David Stewart

Correspondence:

The Society for Insect Studies circular no. 153

EntSocVic donation:
Chethani Atapattu & Ruby Keeble.
Fintona Girls School.Primary Creative Writing Minor Bursary $35 " Fly Trap of Doom!"
Harry Morrall. Girton Gramar School. Junior Inventions Minor Bursary $45. "Stop Mosquito Breeding"

Career Change Opportunity for Science Graduates Full details on Griffith University's website at http://www.griffith.edu.au/education/graduate-entry-teaching/priority-employment-opportunities **From:** ALDEN Kim kalde3@eq.edu.au

Treasurer's Report:

General account $6,451; Le Souef Award account $5,504; Publishing account $14,212
P.Marriott moved that the Treasurers report be accepted; seconded P. Carwardine.

Editor's Report:

Still space for contributions in the December issue.
The December issue will be the traditional colour version; with the new format colour versions commencing in the New Year; with options for different cover photographs for each month.

General Business:

This month we were fortunate to have a number of members with some very interesting material to both present and show.

Marilyn Hewish

Marilyn and Dean have observed a large occurrence of the Cup Moth caterpillars of various colour forms. There appears to be a particular explosion of these this year; and has been seen many years before (around the 50's) but not since. Being found on mature Manna Gums and more recently on the saplings.
The larger caterpillars being seen in Sept/Oct (Figures 1 & 2) seem to have a different colour form. It was suggested that perhaps this is a different instar colouration though no one was sure. It was noted that the larval spines are stinging and Marilyn has so far been able to avoid being stung.

Earlier in the year, Marilyn has encountered huge numbers of the adults; and when this was the case, they were all females (Figure 3) . The males have a peculiar resting habit (figure 4).

Figure 1 *Doratifera oxleyi* Bacchus Marsh 26/09/2011

Figure 2 *Doratifera oxleyi* Lerderderg Gorge 02/11/1011

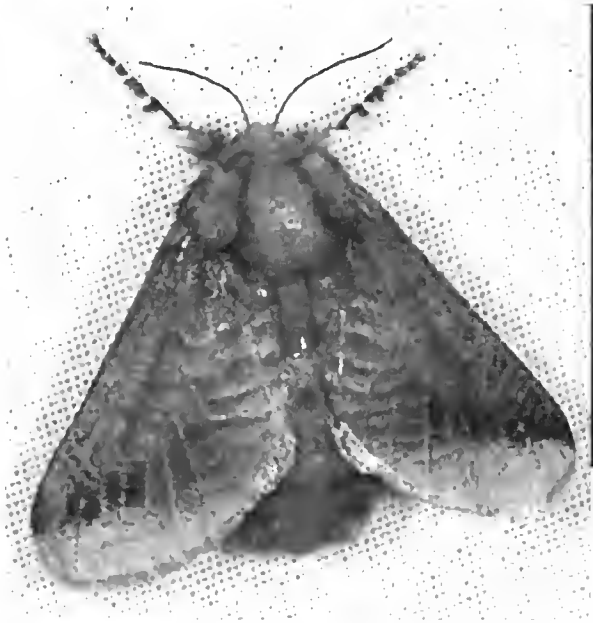

Figure 3 *Doratifera oxleyi* female Lake Condah, 25/03/2011

Figure 4 *Doratifera oxleyi* male Lake Condah, 31/03/2011

Photos of Painted Cup Moth from Marilyns Hewish presentation

Mike Halsey

Mike gave us a fascinating insight into the micro Lepidoptera *Incurvariidae* family. He explained how very little is known about this family of leaf miners. The family is global in its distribution and has somewhere in excess of 100 described species, of which 13 are Australian. One Genus has been established by Ian Common in 1969; the rest just originally placed in the genus with a *Tinea*; being suitably placed there. Ian Commons book in 1990; of Australia's 55 known species, 11 had then been described. Neilson who established this particular chapter of the checklist says that Australia's fauna is in excess of 100. The number keeps rising as we discover more. The family is all associated with Eucalyptus of some sort.

Mike showed us a typical adult moth of the species; one from his local area: (Figure 5)

Figure 5 Undescribed Adult sp Yackandandah (about 5mm wingspan)

Mike then showed us some images of the larval stages of the leaf miner. Showing why this species has captured his interest. He explained that the leaf miner, when nearing maturity, cut a circle around itself in the leaf and ultimately, completes the circle and falls to the ground; (Figure 6) leaving an oval hole in the leaf. In order to collect these larvae, the aim is to collect them just before the complete the circle! Late August to late October seems about the right time to collect them. The cutting of the circle, pushing the frass out etc, takes about a week.

Mike has observed 2 different species; one that curtails the development pre case drop, and one that actually emergences from the case.

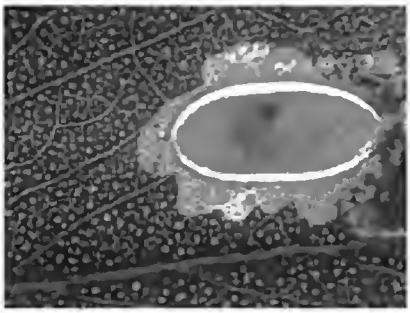

Figure 6 Mature larva – cut out nearly complete

Mike has applied for an ABRS grant to continue working on this family. One of the reasons he believes the grant has some appeal is that prior work has been in response to serious damage to some trees. There

Figure 7 Three Parasitoid emergence holes

seems to be some evidence that this family targets trees on the edges of the forests, damaged or diseased trees.

Linda Rogan

We had some identification requests received on our Facebook page. Linda showed two of these. The first one is believed to be a Spider Faced Hopper Nymph. Perhaps a *Gelastopsis insignis* species? (Figure 8&9)We pondered if anyone knew the function of the two tail like protrusions from the rear?

Figure 8 & 9 Spider Faced Hopper Nymph?

Figure 10 Elephant Weevil?

Second is of a weevil. Thought to be an Elephant Weevil but an exact identification would be very difficult with this particular photograph. (Figure 10) The family and these particular types are numerous and very similar.

The next two were her own photos of mating wasps.
The first pair were flower wasps – feeding on Leptospermum. Perhaps Thynnine wasps ?

The next image is confirmed by Ken Walker to be Typhiid wasps from the subfamily Thyninae. In this photo the winged male carries the pollenia from native Caladenia orchids on its back; the result of pseudocopulation with deceptive orchid labellum previous to the locating the actual female. (Figure 11) She can be seen tightly curled under his tail where he will carry her throughout their copulation until she has had a pollen meal needed to egg production..

Figure 11 Thynnine wasps in copula male with orchid pollenia on back

Ross Field

Ross has been working with Museum Victoria on Victorian species of butterflies and their life history – , covering all 129 species found in Victoria. He previously worked at the museum as Director of Natural Sciences back in the 90's. Now, a book is a natural progression from the Bioinfomatics website to a publication; a labour of love for Ross. It will show all of the life history stages and examples of the food plants in about 300pp. Part of the Museum Victoria's Field Guide series, this will be the first terrestrial group. Ross gave us a sneak preview of the book in draft form. It is expected that the publication will be out in early 2012.

Ross ran through the fascinating details and page layout of the publication and showed several examples of the pages and text. He also kindly brought along some livestock with him. He has had to rear many of the species that either hadn't been reared before or the images available were not of a suitable quality.

Ross's photographs were very detailed and included examples of the different types of eggs/ova (Bright Eyed Brown, Tailed Emperor, Australian Admiral) that had been taken using the auto montage equipment. (Figure 12.)

Figure 12 Egg of *H cordace* (auto montage)

See page 123 for his paper "Colour forms of the immature stages of the Bright-eyed Brown, *Heteronympha cordace cordace*" where you will see the quality of the images that Ross is using within his forthcoming publication.

Ross also sought views, thoughts and feedback over the cover design from members of the society that was at the meeting.

Peter Marriott

Peter presented some recent findings on caterpillars feeding on the flowers of Correa '*Dusky Bells*'. By chance, Peter found a couple of schoolchildren collecting caterpillars. They observed that the flowers with a small hole in the top, with some luck, contained pink caterpillars.

These caterpillars were typical loopers of a *Chloroclystis filata*; a fairly common small moth.Figure 13

Figure 13 *Chloroclystis filata* feeding on Dusky Bells

Peter then discovered his own Correa baeuerlenii - Chef's Hat Correa – which has green flowers; had the same species of moth caterpillars.(Figure 14) The amazing part was, that the caterpillars appear to take on the colour form of the flower colour that they are eating!

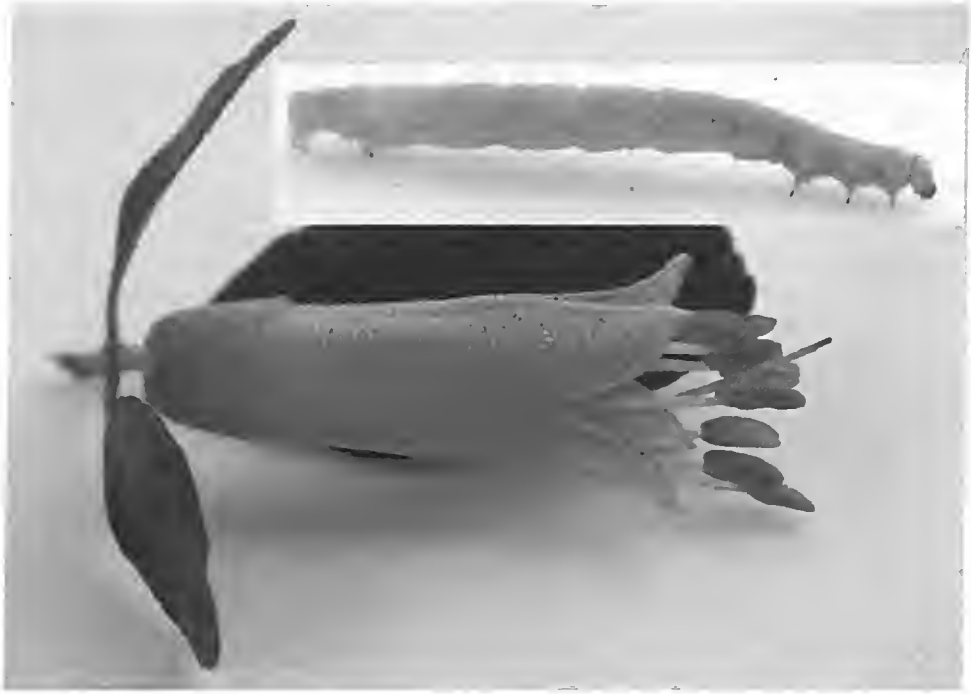

Figure 14 *chloroclystis filata* feeding on Chef's Hat

Next meeting Tuesday 13 December: (Details and map page 98 October bulletin)
The last meeting of the year is the BBQ and Moth Collecting at Warrandyte State Park. All are welcome to the BYO BBQ from 6:30 and we start our meeting at 20:00. As it won't be dark at that time, David Van Bockle from Parks Vic will speak to us about the park and how its fire management may affect the invertebrates and Peter Marriott will speak about light trapping and demonstrate after dark.
Meeting Closed.

2012 Meetings: Please refer to the website for any last minute amendments.

Month	*Date*	*Planned event*	*Topic*
January:		No meeting	
February	21st	General meeting	Bees and Mites TBC
April	17th	AGM	Members presentations
June	19th	General meeting	TBC
August	21st	Members Excursion	TBC
October	16th	General meeting	Members presentations
December	11th	General meeting	TBC **Note:** second Tuesday of December

Council meeting dates: March 20th; May 15th; July 17th; September 18th and November 20th

The following article first appeared in *Australasian Arachnology*. Our usual policy of original articles only for our bulletin is waived here due to interest expressed in this topic by members, with permission from the authors. Our thanks LR Ed.

Gossamer Extraordinaire!

by Volker Framenau1, Meri Macpherson2 and Dave Munro3
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MANY SPIDER species disperse by ballooning, which means young spiderlings drift through the air, carried by the wind on a thin strand of their own silk, the "gossamer" thread (Bell *et al.*, 2005; Decae, 1987). This behaviour is well studied in a number of spider groups and sometimes also occurs in larger adult spiders (Schneider *et al.*, 2001). Representatives of many spider families are known to balloon, especially smaller species of Money Spiders (Linyphiidae) (Weyman, 1995) and Combfooted Spiders (Theridiidae) (Valerio, 1977). Many Wolf Spider species (Lycosidae) also balloon (Richter, 1970) and this behaviour, in addition to mobile brood care, may contribute to the ecological success of the family. For example, wolf spiders are usually among the first colonisers after volcanic eruptions (Crawford *et al.*, 1995; Edwards and Thornton, 2001).

Figure 1. A field of gossamer threads near Lake Linlithgow, Victoria (September 2010). Image by Meri Macpherson.

Spiders often have a life cycle that is synchronised with the seasons, especially in temperate environments (Schaefer, 1987). *Australasian Arachnology* 82 Page 6

Certain life stages within the same species often occur at exactly the same time within a population and often at the same time each year, although the mechanisms that govern this tight synchronisation are unknown for many species (Framenau and Elgar, 2005). Ballooning of juveniles (in combination with life cycle synchronisation) appears to be responsible for a spectacular phenomenon that could be observed at Lake Linlithgow and Bryans Swamp near Grampians National Park, south-western Victoria, in September 2010 (Figs 1-2).

Figure 2. A field of gossamer threads near Lake Linlithgow, Victoria (September 2010). Image by Meri Macpherson.

(Continued on page 126)

Continual insect migration across Bass Strait?

Lionel Hill

Department of Primary Industries, Parks, Water & Environment, Tasmania, P.O. Box 303, Devonport 7310, Lionel.Hill@dpipwe.tas.gov.au.

Although there is a general awareness among the entomological community that insects such as locusts, the bogong moth and certain butterflies undertake sporadic migrations, I suspect that the number of species and frequency of events is underestimated by many. This article suggests that dispersal from mainland Australia to Tasmania occurs very frequently. It is not possible in one short article to provide a lot of evidence but Hill (2011a, 2011b) provided more detailed accounts for *Utetheisa pulchelloides* Hampson and *Nabis kinbergii* Reuter.

Helm demonstrated that southern armyworm, *Persectania ewingii*, probably migrated across Bass Strait from the mainland and that the closest, timely source area was the Yorke Peninsula of South Australia. Drake *et al.* (1981) combined meteorology, light trapping and radar observations to document several migrations of insects across Bass Strait from mainland Australia to Tasmania. Notably, in the context of this article, they showed that such events and suitable airflows occurred as frequently as six times during 24 consecutive days in spring. They wrote, "The radar detected a movement of targets from the direction of the mainland during each of the six periods of northerly or north-westerly winds". They also cite Fox (1975) to show that, "large numbers of Australian Lepidoptera were caught ... in New Zealand on the same north-westerly wind system that carried insects across Bass Strait during the massive migration of 29-30 September [1973]". Greenslade *et al.* (1999) described insect migration from mainland Australia to Macquarie Island and. One of the events analysed by them coincided with events detected in the Stony Rise trap in north-western Tasmania, in October 1996, but this is not included in the analysis below because full annual data is not available for that year. Pierrehumbert *et al.* (1984) described the meteorological conditions favouring such long movements beyond Tasmania to Macquarie Island.

Gregg *et al.* (1993) provided a long list of probable migratory noctuid moths detected in an elevated, upwardly directed light trap at Point Lookout, NSW. Holloway (1984) identified species migrating to Norfolk Island while Fox (1978), Dugdale (1988) and Hoare (2001) identified species migrating to New Zealand, many of which originate from the Australian mainland.

This article provides an overview of data from a 160W mercury vapour light trap of Rothamsted pattern operated at Stony Rise near Devonport in north-western Tasmania. The trap is 1.5m above ground at 60m elevation about 5km south of Bass Strait. It operated daily from 1992 to 2006 excluding January-July in 1996 and 1998. Data for the 13 full years is analysed here in weekly format because the trap was manually serviced at irregular intervals of one to several days. About 138 species, mostly Noctuidae, were enumerated in the catches and 55 are selected here as probable migrants or vagrants.

The 55 putative migrants (Table 1) include 52 Noctuidae, the plutellid diamondback moth, *Plutella xylostella* (Linnaeus), the arctiid heliotrope moth, *Utetheisa pulchelloides* Hampson and the syrphid hoverfly *Melangyna* sp. Those asterisked in Table 1 are not mentioned as migrants in the literature cited above. Some others that were listed by Gregg *et al.* (1993) are not included in this analysis because of uncertainty about their migratory origin when light-trapped in Tasmania. These include, among others, *Netelia* spp. (Ichneumonidae) (1141), *Agrotis porphyricollis* (Guenée) (5672), *Dasygaster padockina* (Le Guillou) (1483), *Diarsia intermixta* (Guenée) (1429), *Proteuxoa hypochalcis* (Turner) (1842), *Proteuxoa sanguinipuncta* (Guenée) (2379) and *Neumichtis nigerrima* (Guenée) (16) whose total catches (comparable to those in Table 1) are indicated in parentheses. The weed web moth, *Achyra affinitalis* (Lederer, 1863), Rutherglen bug, *Nysius vinitor* Bergroth and green mirid *Creontiades dilutus* (Stål) were not enumerated for many years but are useful indicators of migratory catches in the Stony Rise trap.

The relative species composition of migrant catches at Stony Rise (Table 1) differs from Point Lookout, NSW where Gregg *et al.* (1993) recorded, among others, 20.4% *A. infusa*, 18.5% *M. convecta*, 6.1% *H. punctigera*, 4.4% *H. armigera*, 2.2% *'L'. obumbrata*, 1.8% *A. munda*, 0.7% *P. ewingii*, 0.6% *C. eriosoma*, 0.4% *C. argentifera* and 0.3% *C. subsidens*. In contrast, *P. ewingii*, *H. punctigera* and *A. munda* are frequent and abundant migrants to Tasmania and detectable by light-trapping while *M. convecta* is perhaps less abundant and certainly better detected in traps using a sweet fermenting lure (unpub.) data).

Table 1. 55 putative migrants (when detected by light trap) ranked by the total number of specimens trapped at Stony Rise over 13 years with the number of weeks (out of a possible 676) in which they were trapped. Asterisk indicates no literature cited here to confirm migratory status.

Species	Common name	Class	Specimens	Rank	Weeks
Plutella xylostella (Linnaeus)	diamondback moth	M	12138	1	341
Persectania ewingii (Westwood, 1839)	southern armyworm	M	5278	2	430
Utetheisa pulchelloides Hampson	heliotrope moth	V	4251	3	89
Helicoverpa punctigera(Wallengren, 1860)	native budworm	M	2686	4	345
Agrotis munda Walker, [1857]	brown cutworm	M	2422	5	324
Agrotis infusa (Boisduval, 1832)	bogong moth	M	962	6	229
Athetis tenuis (Butler, 1886)		V	938	7	201
Hellula hydralis Guenée 1854	cabbage-centre grub	V	835	8	170
Pantydia spp. (*sparsa* & *diemeni*)		V	485	9	269
Chrysodeixis argentifera (Guenée 1852)	tobacco looper	M	419	10	139
Leucania uda Guenée, 1852		V	232	11	160
Melanchra viridiceps? (Macquart XXXX)	common hoverfly	V	204	12	99
'Leucania' obumbrata T.P. Lucas, 1894		V	196	13	105
Heliothis punctifera Walker ,1857		V	170	14	45
Hypoperigea tonsa Guenée, 1852		V	127	15	60
Mythimna convecta (Walker, 1857)	common armyworm	V	97	16	57
Neumichtis expulsa (Guenée 1852)		V	96	17	91
Crioa hades (Lower, 1903)		V*	63	18	57
Rhodina falculalis Guenée 1854		V*	51	19	38
Persectania dyscrita Common, 1954	inland armyworm	V	49	20	38
Cosmodes elegans (Donovan, 1805)	greenblotched moth	V	45	21	43
Schrankia capnophanes (Turner, 1939)		V*	44	22	19
Chrysodeixis subsidens (Walker, 1858)	Australian cabbage looper	V	39	23	35
Mataeomera dubia Butler, 1886	scale-eating caterpillar	V*	36	24	25
Diatenes gerula Guenée 1852		V*	29	25	24
Chrysodeixis eriosoma (Doubleday 1843)	green looper	V	29	25	25
Helicoverpa armigera (Hubner, 1808)	corn earworm	V	24	26	20
Rhapsa eretmophora Turner, 1931		V*	22	27	15
Prometopus inassueta Guenée, 1852		V*	16	28	16

Species	Common name	Class	Specimens	Rank	Weeks
Dasypodia selenophora Guenée 1852	granny moth	V	16	28	16
Sandava scitisignata (Walker, 1862)		V*	15	29	10
Australothis rubrescens (Walker, 1858)	Indian weed caterpillar	V	13	30	13
Proteuxoa oxygona? (Lower, 1902)		V*	12	31	11
Agrotis ipsilon (Hufnagel, 1766)	black cutworm	V	10	32	8
Bathytricha truncata (Walker, 1856)	sugarcane stemborer	V*	8	33	8
Earias huegeliana Gaede, 1937	rough bollworm	V*	6	34	6
Eudesmeola lawsoni (Feld. & Rog., 1874)		V	3	35	3
Spodoptera exigua (Hubner, [1808])	lesser armyworm	V*	3	35	2
'Chabuata' dentosa Turner, 1911		V*	3	35	3
Lophocalama sp.		V*	2	36	2
Small reddish Catocalinae		V*	2	36	1
Thysanoplusia orichalcea (Fabricius, 1775)	soybean looper	V	2	36	2
Aedia leucomelas (Linnaeus, 1758)		V*	2	36	2
Proteuxoa florescens (Walker, [1857])		V*	2	36	1
Proteuxoa mesombra (Lower, 1893)		V*	2	36	2
Sandava xylistis Meyrick 1902		V*	2	36	2
Earias paralella T.P. Lucas 1898		V	1	37	1
Alapadna pauropis Turner, 1902		V	1	37	1
Tathorhynchus fallax Swinhoe, 1902		V	1	37	1
Armatica conchidia (Butler, 1886)		V*	1	37	1
Chasmina pulchra (Walker, [1858])		V*	1	37	1
Eremochroa alphitias? Meyrick 1897		V*	1	37	1
Proteuxoa microspila (Lower, 1902)		V	1	37	1
Proteuxoa tibiata? (Guenée, 1852)		V	1	37	1
Leucania stenographa Lower, 1900	sugarcane armyworm	V*	1	37	1

Six species are grouped as 'major migrants' (Table 1, Groups A & B) because of their regularity and abundance and, for the five Noctuidae, some uncertainty about the proportion of local 'summer-generation' moths in late summer and autumn catches. Diamondback moth is separated from Group B to reflect its numerical dominance and seasonal behaviour in which three rather than one local generations occur with a substantial decline in abundance of larvae and moths in late summer-autumn. The other 49 species are Group C, which includes rare 'vagrants' such as the subtropical soybean looper, many regular migrants that rarely or never breed in Tasmania (for example, *A. tenuis*, *H. hydralis* and *H. tonsa*) and some that may have an insignificant summer generation (green looper).

Figure 1 p. 120 shows that, on average, migrant species arrive in many weeks of the year. Of 676 possible weeks in 13 years, no putative migrants were recorded in only 67 weeks (9.9%). Detailed analysis of catches that is not presented here suggests that individuals (probably often immature Noctuidae) are usually caught within a few days of arrival so that carry-over from one week to the

(Continued on page 122)

Figure 1. Average weekly number of Group A, B & C species over 13 years in Stony Rise light trap. Group A (diamondback moth), spotted; Group B, horizontal hatch; group C, diagonal hatch.

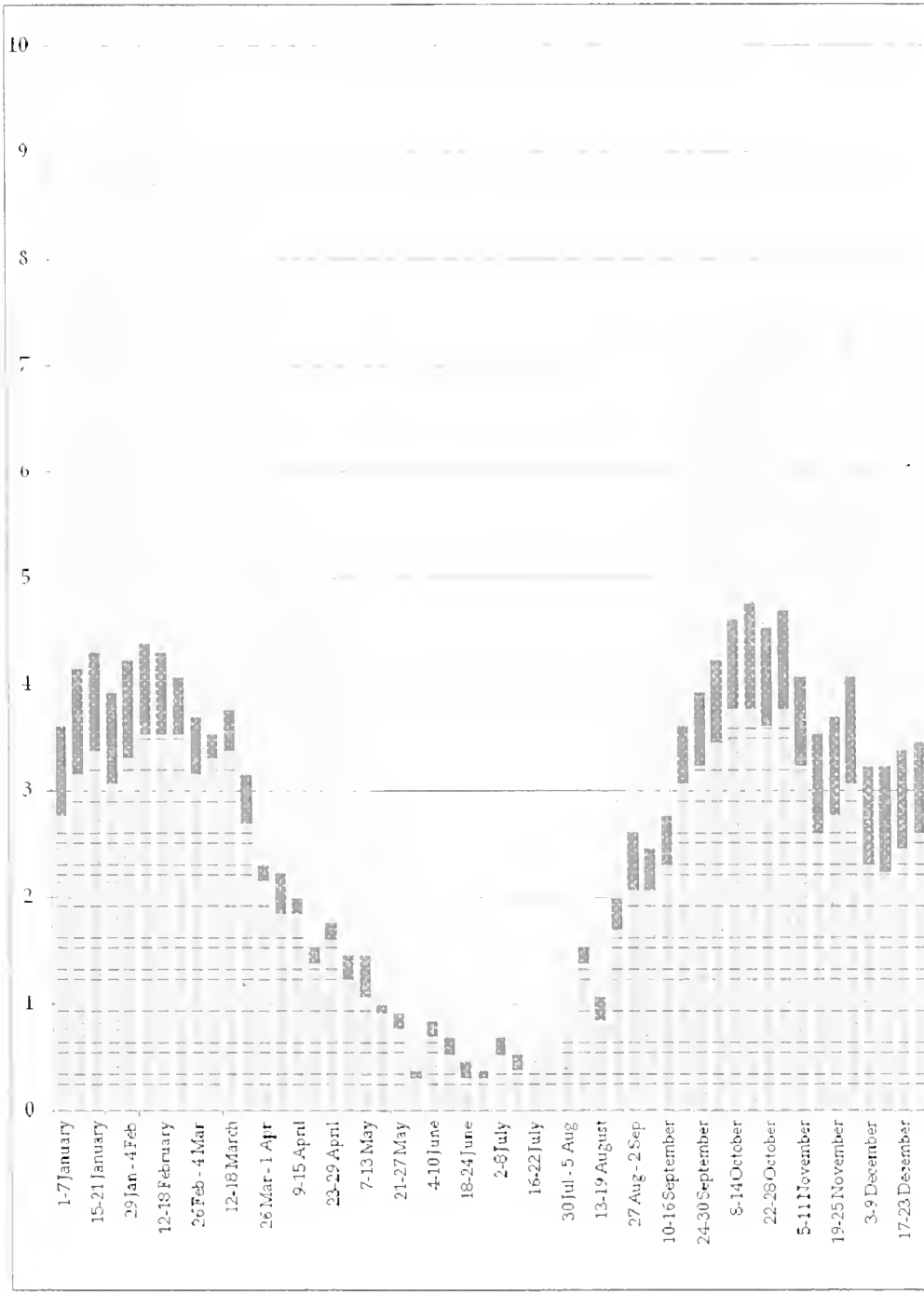
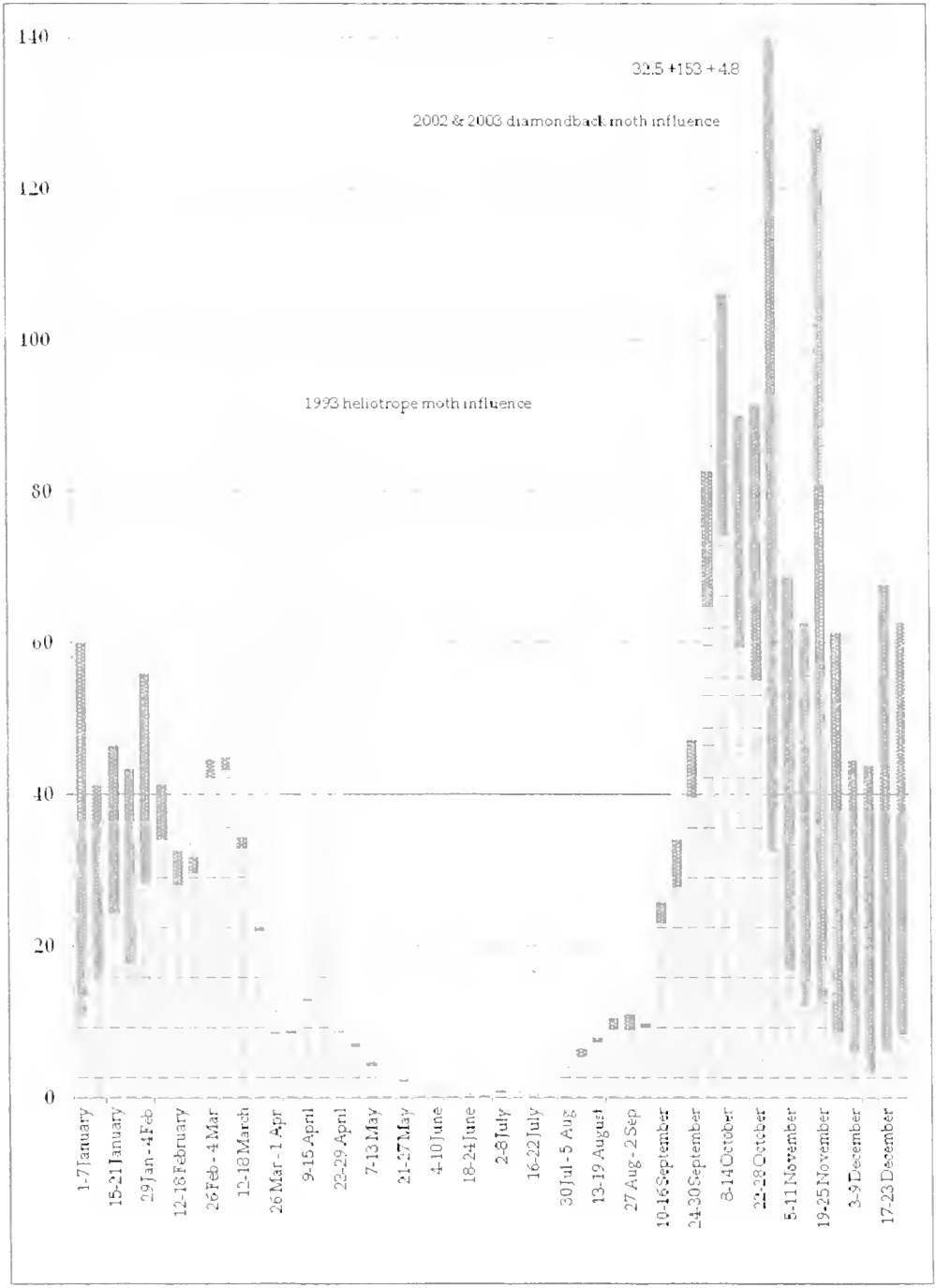


Figure 2 shows the average weekly number of Group A, B & C specimens caught over 13 years in Stony Rise light trap. Group A (diamondback moth), spotted; Group B, horizontal hatch; Group C, diagonal hatch.



(Continued from page 119)

next is not great. There may be minimum diversity and abundance of immigrants in winter, when a few southern armyworm and brown cutworm typically indicate migratory events. Nocturnal temperatures during this period least favour detection in a light trap (for Devonport, only December, January, February and March have average minimum temperatures above 10°C) but nocturnal temperatures vary greatly as a procession of warm northerly and cold westerly air masses rapidly pass over north-west Tasmania. Also, the path of anticyclones shifts seasonally (Sinclair, 1996) so that suitable airflows perhaps vary seasonally with a minimum in winter. On the other hand, several authors have described how the major migrants of group B such as native budworm, southern armyworm and common armyworm have seasonal peaks of breeding and dispersal such that the winter lull detected at Stony Rise may reflect a real lack of source populations in winter.

Figure 2 p. 121, helps to indicate the dominance of Group B in terms of biomass in trap catches during spring as well as the influence on the 13-year average of particular events such as massive immigration of heliotrope moth in 1993 and two massive migrations of diamondback moth in early November 2002 and late November 2003. The sudden slump in diamondback moth catches in February is unlikely to result from low air temperatures reducing light trap efficiency but perhaps results from low populations in mainland breeding sites or low populations in Tasmania resulting from a peak in parasitism and disease among immature stages in January (Hill and Wardlaw, 2004). Examination of synoptic charts coinciding with many putative migratory catches is not presented here but initial analysis (such as underlying Hill, 2011a, 2011b) suggests a rapidly alternating pattern of suitable northerly and less suitable westerly or southerly airflows that reconcile well with migratory explanations.

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Colour forms of the immature stages of the Bright-eyed Brown,

Heteronympha cordace cordace (F. Nymphalidae)

Ross P Field
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Summary: Mature larvae of the Bright-eyed Brown *Heteronympha cordace*, reared both indoors and outdoors, appear to be predominantly brown with a green form making up about 10% of the population. The pupae are usually green with black markings but colour variants do occur, one pupa being pale bluish-green with extensive black markings. Although the larval food plant is primarily Tall Sedge (*Carex appressa*), larvae were also found to readily feed on Horny Snowgrass, *Poa fawcettiae* when present with *Carex*.

Introduction

The Bright-eyed Brown, *Heteronympha cordace*, is an Australian endemic butterfly which occurs in disjunct populations from north-eastern New South Wales to southern Victoria and south-eastern South Australia and Tasmania. Five subspecies are recognised, two of which occur in Victoria, *H. c. cordace* and *H. c. wilsoni*. Populations are known from swampy habitats in alpine areas of the Great Divide to coastal areas in both the east and west of the State. Colonies are static and sparse but at times it can be locally common. Many populations have become extinct through habitat loss resulting from swamp drainage and wildfire. Few specimens of the subspecies *wilsoni*, from the south-west of the State, have been found in recent years.

Adults fly slowly amongst their larval food plant (Tall sedge, *Carex appressa*) growing in swampy areas but will feed at flowers of *Melaleuca* and *Leptospermum* growing at the edge of the swamp. Eggs are laid singly or in small numbers on the underside of lower leaves of the *Carex*. The larvae feed at night and rest during the day on the plant, usually at the base. Pupation occurs on the food plant or nearby, the pupa suspended head down by the cremaster. As with all species of *Heteronympha* only one generation is completed annually and the larva stage overwinters with feeding occuring, in at least milder areas, throughout the cooler months.

This species is reportedly the only member of the genus *Heteronympha* not using grasses as the primary larval food plant. The biology of the butterfly was described by Alex Burns (1957) when he successfully reared specimens through on *C. appressa*. His publication depicted black and white images of the larvae and pupae and described colour forms of the larvae, a feature also found in many other *Heteronympha*.

As part of a project to document and image capture the life histories of all the Victorian butterfly species, many species have had to be reared on potted plants. Because of the difficulty of finding immature stages of *H. cordace* in the field, this species was collected as adults (from Whitlands on 26 January 2011), the females induced to oviposit and the larvae reared until adult emergence. This paper documents some of the colour forms found in the larvae and pupae.

Life history observations

H. cordace readily oviposits in captivity indoors. If females are caged in large plastic containers (>3L) containing several leaves of *C. appressa*, eggs will generally be produced within 24 hours. The egg is green, nearly spherical, 0.8 mm, with fine longitudinal cross-hatched ribs (Figure 12 page 114).

Newly hatched larvae were transferred to potted plants of *C. appressa*, some plants being held in a cage indoors and others outdoors in a cage. The outdoor cage also contained plants of *Poa fawcettiae* (Horny Snowgrass) on which were being reared Xenica (*Oreixenica* sp.) larvae.

Mature larva of *H. cordace* are 25-30 mm, generally brown (Figure 2) but may be green (Figure 3) or greenish-brown with a darker middorsal line. Brown forms have a series of and pale brown dorsolateral and lateral lines which are very faint or non-existent in green larvae. The anal segment has a forked projection with the lateral edges cream. The head is slightly concave, reddish-brown and mottled light brown. Of the 27 larvae reared to maturity 3 were the green form. Larvae in the outdoor cage would often be found feeding (at night) on *P. fawcettiae*, despite ample *Carex* being available.

The pupa is 14 mm, green with yellowish-green wings and black spots to forewing and dorsolaterally to the abdomen, laterally to the base of the cemaster and sparsely to the thorax and head (Figure 4). One indoors brown larva produced a bluish-green pupa (Figure 5) with an extensive network of fine black lines and small spots in addition to the black markings found on the common green pupa. Pupation generally occurred on the plant stem close to the ground.

Discussion

Both indoors or outdoors brown and green larvae are produced when reared on *Carex*. Additional colour forms to the usually green pupa reported by Burns (1957) can also occur although it is uncertian as to how common this is and what caused the colour variant. The larvae appear to be able to maintain growth on *P. fawcettiae* but it is unknown if the females will oviposit on the grass in the field and whether or not complete development can occur in the absence of *Carex*. It is not uncommon for *C. appressa*, *P. fawcettiae* and other species of *Poa* to occur growing together in alpine regions. Further studies are planned on host plant selection by females and documenting the life stages of rarer subspecies *H. cordace wilsoni*.

Acknowledgments

Dr Ken Walker and Simon Hinkley (Museum Victoria) provided the automontage image of the egg.

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Wings and stings From Ian Endersby

When David Holmes had a clearout of accumulated entomological material, including his reprint collection, we took the opportunity to scan his fourteen copies of *Wings & Stings*, the fore-runner to *Victorian Entomologist*.

Technology at the time meant that we could have either a pdf looking exactly like the original typeface, or a version that was searchable but the typeface had changed. More recent computer software has allowed us to produce searchable copies that look exactly like the original. The complete set occupies about 9 MB so we can supply them on a CD for the cost of packing and postage ($2.50).

Contact treasurer@entsocvic.org.au

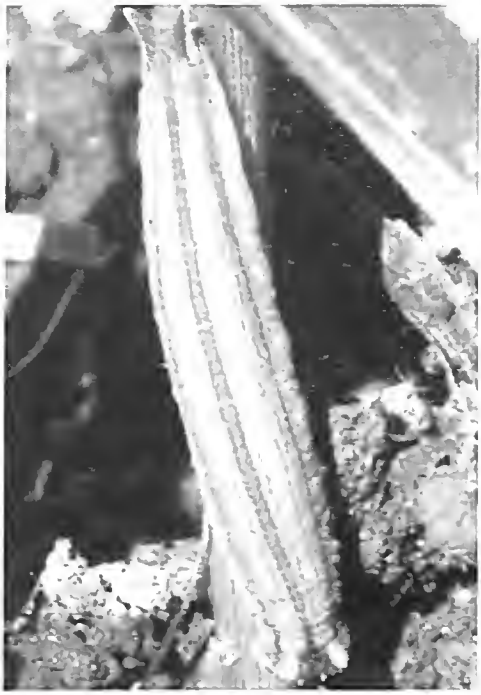


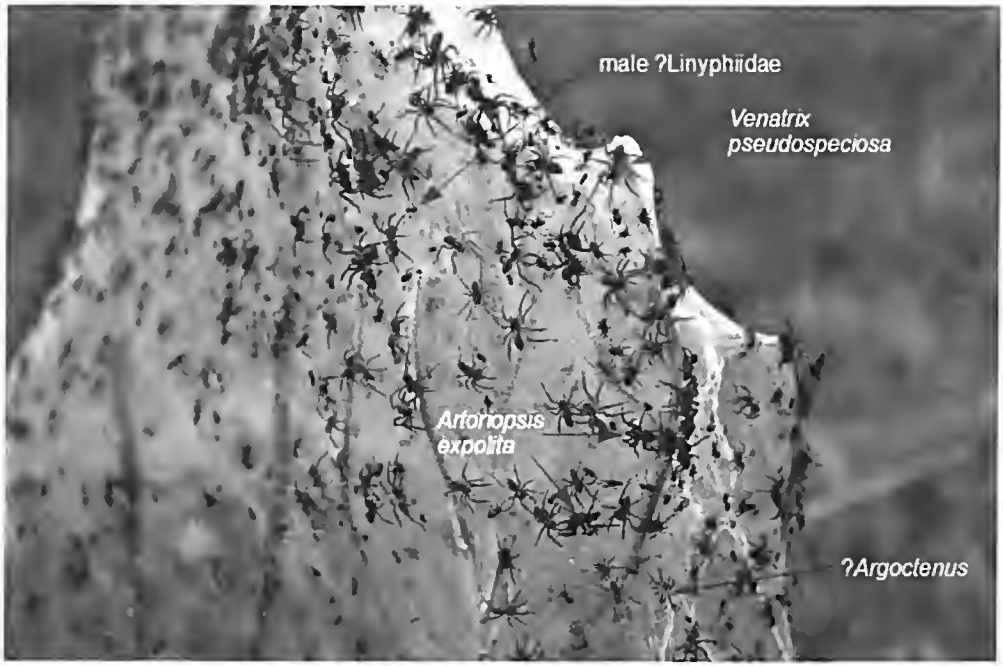
Figure 2. Brown larva (common form)

Figure 3. Green larva,(uncommon form)

Figure 4. Green pupa (common form)

Figure 5. Bluish-green pupa (uncommon form)

(Continued from page 116)



What is remarkable in this mass emergence of juvenile spiders is not only the scale at which it occurred– leading to a dense cover of silk on low vegetation (Figs 1-2) – but also that the gossamer event was driven by a diverse array of spider families and species that apparently didn't show much aggression towards each other, even in close proximity. Wolf spiders from different genera and species appear to have driven the event, although other spider families shared the precious free space on the extensive sheet of webs (Fig. 3).September 2010).

Unfortunately, it is not possible to accurately identify the spider assemblage based on the photos alone. Most of the spiders, in particular the wolf spiders, were immature, and species identification is almost impossible for juveniles. However, at least two species of Wolf Spiders were present and based on known distribution patterns, these were most likely the Eastern Lawn-Runner (*Venatrix pseudospeciosa* Framenau & Vink, 2001) and the Polished Wolf Spider (*Artoriopsis expolita* (L. Koch, 1877)) (Fig. 3). Both species are abundant in low vegetation near water and are often observed on well-watered lawns in suburban gardens and parks (Framenau, 2007; Framenau and Vink, 2001). Other taxa joined the gathering, and Figure 3 indicates that at least two other families were present, the Spiny-leg Spiders (Zoridae; possibly a juvenile *Argoctenus* Koch), and the Linyphiidae.

All activity appeared to be on the south-west, west and north-west shorelines up to a distance of ca. 3-4 km from the shore. After an initial visit to Lake Linlithgow on 2 September, when spider activity appeared to be high, about two weeks later, on 17 September, all webs were empty and degraded except for one area in the north-west of the lake where there was still some activity, limited solely to wolf spiders. The dense carpets of spider silk were probably not just made up of the remainder of the gossamer threads after the spiders landed on the vegetation. Ground living spiders are known to produce 'draglines', i.e. they deposit a strand of silk when they walk. These may serve as *Australasian Arachnology* 82 Page 7 'security threads' by which they can pull themselves back in case of danger, but they also attract mates as these draglines have been shown to contain pheromones, at least in wolf spiders (Holler and Persons, 2009; Tietjen and Rovner 1980, 1982). Once the ground is covered in silk, later arrivals from the air may not have a chance to move lower into the

vegetation where they normally live, therefore contributing to the growing carpet of silk.The senior author remembers a conversation a few years ago with Liz Turner from the Tasmanian Museum and Art Gallery, who reported on a mass dispersal event of wolf spiders, most likely species of *Artoriopsis*, in Tasmania

. In recent years local naturalists have also reported a similar event from Pic Swamp, in south-eastern Australia (personal communication to D. Munro). Although not seen very often, especially in our modified cultural and agricultural landscapes, mass emergences of spiders may occur fairly regularly when conditions are right, i.e. life cycles of a number of species overlap and gossamer events are synchronised.

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Figure 1

Cizara ardeniae

Photo by Martyn Hiley

Papilio aegus (Orchard Swallowtail); One male ; Montmorency, Vic., 11 November 2011 Margaret Endersby

Cizara ardeniae (Figure 1) 9 September 2011 at 10:29:photographed in a gully near Mallacoota. GPS: 37 33' 38" S 149 45' 31" E Martyn Hiley

Scopula optivata 4/11/2011 onwards, still many around 14/11/2011 There were one or two back in March Laura Levens

Glyphipterix chrysoplanetis 4/11/2011 onwards and still many around 14/11/2011 I saw my first specimen in Nov 2009, and next one in Nov 2011 Laura Levens

Utethesia pulchelloides February to May 2011 was flying in quite large numbers attracting my attention because it appeared to be a small blue moth until it landed and furled it's wings. Laura Levens

Laura reports seeing fewer of the larger moths this year: "as *Elhamma* sp. saw one on a garage door in March instead of 4 or 5 in other years and *Oxycanus* species seems to appear every couple of years in May or June but none make ghostly noises this year."

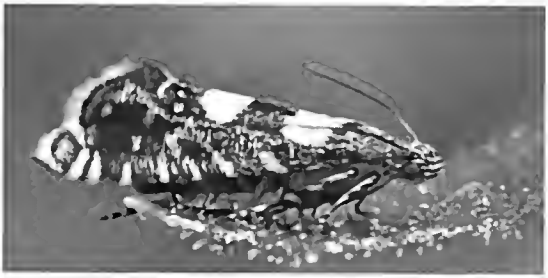


Figure 2 *Glyphipterix chrysoplanetis*
Photos Fig 2 & 3 by Laura Levens

Figure 3 *Utethesia pulchelloides*

Some unusual moth records for NE Victoria

Mike Halsey – Yackandandah – m.halsey@latrobe.edu.au

Listed and figured below are some observations of moths which I would not consider normal sightings for the Wodonga-Yackandandah area of NE Victoria. I have been collecting in the area for 22 years, the last 11 in Yackandandah where all the below records are from.

Digama marmorea (Butler, 1877) - Aganaidae 7 specimens between the 8th and 11th November 2010. These were the first I have seen in the area.

Grammodes ocellata (Tepper, 1890) - Noctuidae Commonly (more than 30 specimens) seen in November 2010. This species is seen in this area in ones and twos most years, but previously always in February.

Grammodes justa (Walker, 1858)- Noctuidae 1 specimen only on 11 November 2010. This was the first I have seen in the area.

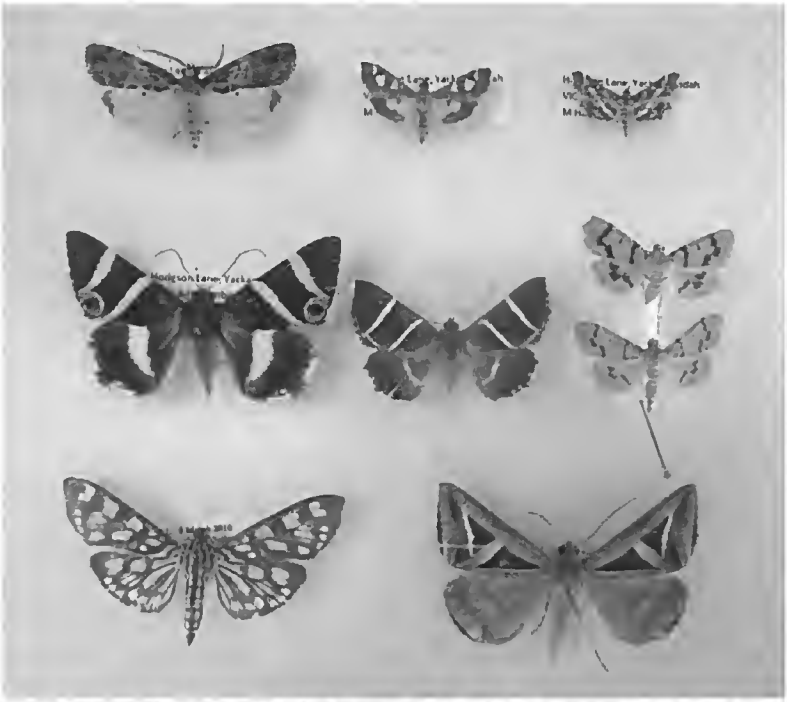
Glyphodes microta (Meyrick, 1889)- Crambidae 2 specimens on 9th and 11th March 2011, the first I have seen in the area.

Trigonnodes hyppasia (Cramer, 1779) - Noctuidae 1 specimen only on 23 March 2011, the first I have seen in the area.

Diasemiopsis ramburialis (Duponchel, 1834)- Crambidae 1 specimen only on 9 March 2011, the first I have seen in the area.

Dichocrocis clytusalis (Walker, 1859) - Crambidae I would normally observe up to 4 or 5 a year. 2010/11 year, this species was abundant and many larval sites observed.

Also included in the figure right is a specimen of *Pygospila tyres* (Cramer, 1780), probably the most unusual visitor to the area, in this case from the previous season (8 March 2010)



Top: Left *Digama marmorea* Centre. *Glyphodes microta* Right: *Diasemiopsis ramburialis*
Middle: Left *Grammodes ocellata* Centre: *Grammodes justa* Right: : *Dichocrocis clytusalis*
Bottom: Left: *Pygospila tyres* Right: *Trigonnodes hyppasia*

Two locations for Golden Sun Moths west of Melbourne

Marilyn and Dean Hewish hewishs@iprimus.com.au

Planning, persistence and blind luck are valuable assets in the tool-box of any naturalist. We recently used all three in discovering two locations near Bacchus Marsh and Little River for the endangered Golden Sun Moth.

The Golden Sun Moth *Synemon plana* is a day-flying moth in the family Castniidae. The principal habitat is open grasslands with indigenous species, especially Wallaby-grasses *Austrodanthonia* spp. The larvae feed underground on the roots of these grasses. Locally, native grasslands have been severely affected by the introduction of exotic grasses and are under continuing threat from urban expansion. The fauna species dependent on them are similarly under pressure. Golden Sun Moths are listed as Threatened in Victoria under Schedule 2 of the Flora and Fauna Guarantee Act (1988) and as nationally endangered under the Environment Protection and Biodiversity Conservation Act (1999).

In recent years, a series of surveys has been undertaken to examine the distribution of this species around Melbourne's northern and western fringes (Endersby and Koehler 2006; Gilmore et al. 2008; DSE surveys). Published information suggests that the moths occur patchily from the Craigieburn area south to Altona and west to Melton As surveys are ongoing, knowledge of distribution is continually evolving, but it is important to extend the search area and report sightings to DSE.

The most efficient survey method is to walk the grasslands when the duller coloured males are patrolling in search of the females: between October and January; from 10:00 to 14:00; and on warm days (more than 20 degrees C) with little wind (Gilmore et al. 2008).

When I learnt about Golden Sun Moths, I immediately thought of Live Bomb Range Road north-east of Little River on the Werribee Plains as a possible location. This is a seldom travelled dirt road. During surveys for grassland birds in 2004, we noticed that the verges had a good cover of native grasses, including *Austrodanthonia* spp (Andrew Hill, in Hewish and Hewish 2005). It is not the most pleasant place to be in mid-summer. On hot days the sun beats down. There is no shade, and the area is flat, exposed and often windy, even when it's calm elsewhere. You wouldn't choose to go there without a good reason.

Figure 1 *Synemon plana* can be identified the clubbed antennae, brown colouring and pale-bordered shapes on the forewings

On 21 December 2008 (35 degrees C, hot north wind), we walked the road verges and saw 10-12 medium-sized dark moths flying low over the grass. A brief glimpse through binoculars of one that settled suggested a sun moth but we were unable to get photos and we didn't have a net. On 24 December

and 11 January 2009, we found no moths. In the next summer we came prepared with a net, but on 28 December 2009 we were again unsuccessful.

In the third summer, we tried again on a hot calm day, 6 January 2011. We walked for about a kilometre and found nothing. We retreated to the car for a drink and, as Dean finished first, he went back out with the net. At 14:45, I saw him returning holding the net tightly and carefully half way down. "What's this", he asked. Peering through the mesh, I spied the brown wings with pale lines typical of a Golden Sun Moth *Synemon plana*. At last!

A photo was necessary. With extreme care, we slid a glass jar into the folds of the net, and then the lid. The moth was rather battered and worn but the clubbed antennae, brown colouring and pale-bordered shapes on the forewings identified the species. In the photos, a sliver of golden-yellow colour just shows on a partly exposed hindwing. Figure 1

The capture location was on the eastern extension of Kirks Bridge Road 114 m west of its junction with Live Bomb Range Road (lat. 37 deg. 54 min. 24 sec. S, long. 144 deg. 32 min. 47 sec. E). We released the moth at the capture site. We later saw 3 or 4 other moths, probably the same species, but did not capture them.

Our next local encounter with this species owed nothing to foresight. It was pure accident. We'd bought a new camera, and at 13:00 on 20 January 2011, Dean was testing the close-up function by photographing day-flying moths at Merrimu Reservoir picnic ground north-east of Bacchus Marsh. He flicked through the photos for me but I could see nothing because of the glare of bright sunlight on the camera screen.

Back home, I downloaded the photos onto the computer, more to check the quality than to identify the species. Surely they were examples of the common day-flying moths that inhabit grasslands and lawns. And one photo came up, under-exposed but perfectly recognizable as a Golden Sun Moth. The picnic area (lat. 37 deg. 37 min. 44 sec. S, long. 144 deg. 28 min. 55 sec. E) is on an escarpment overlooking the reservoir, and it is dominated by introduced mown grasses with scattered plantings of Australian trees and shrubs, a few indigenous but probably not local stock. It is surrounded by open fields of mainly introduced grasses.

Details of both sightings and the photographs were sent to DSE for inclusion in the database of their ongoing surveys.

At a time when our outer urban grasslands are disappearing under housing developments, any information about the distribution of this rare moth is valuable. If, like us, you come across a Golden Sun Moth, please report it to DSE.

Acknowledgments

Thanks to Wendy Moore and Peter Marriott for valuable information and references and for cultivating our interest in this fascinating species; to Richard Loyn and Ed McNabb for information on the DSE surveys; and to Wendy Moore for comments on draft of this report.
Our Victorian moth studies are conducted under DSE permit no. 10004688.

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Tuesday March 20th 2012
Council Meeting

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